

out, or if you find no passage, you may, by breaking or cutting the Gall, find in the middle of it a small cavity, and in it a small body, which does plainly enough yet retain a shape, to manifest it once to have been a Worm, though it dy'd by a too early separation from the Oak on which it grew, its navel-string, as 'twere, being broken off from the leaf or branch by which the Globular body that envelop'd it, received its nourishment from the Oak.

And indeed, if we consider the great care of the Creator in the dispensations of his providences for the propagation and increase of the race, not onely of all kind of Animals, but even of Vegetables, we cannot chuse but admire and adore him for his Excellencies, but we shall leave off to admire the creature, or to wonder at the strange kind of acting in several Animals, which seem to favour so much of reason; it seeming to me most manifest, that those are but actings according to their structures, and such operations as such bodies, so compos'd, must necessarily, when there are such and such circumstances concurring, perform: thus, when we find Flies swarming about any piece of flesh that does begin a little to ferment; Butterflies about Colworts, and several other leaves, which will serve to hatch and nourish their young; Gnats, and several other Flies about the Waters, and marishy places, or any other creatures, seeking and placing their Seeds in convenient repositories, we may, if we attentively consider and examine it, find that there are circumstances sufficient, upon the supposals of the excellent contrivance of their machine, to excite and force them to act after such or such a manner; those steams that rise from these several places may, perhaps, set several parts of these little Animals at work, even as in the contrivance of killing a Fox or Wolf with a Gun, the moving of a string, is the death of the Animal; for the Beast, by moving the flesh that is laid to entrap him, pulls the string which moves the trigger, and that lets go the Cock which on the steel strikes certain sparks of fire which kindle the powder in the pann, and that presently flies into the barrel, where the powder catching fire rarifies and drives out the bullet which kills the Animal; in all which actions, there is nothing of intention or ratiocination to be ascrib'd either to the Animal or Engine, but all to the ingeniousness of the contriver.

But to return to the more immediate consideration of our Gnat: We have in it an Instance, not usual or common, of a very strange *amphibious* creature, that being a creature that inhabits the Air, does yet produce a creature, that for some time lives in the water as a Fish, though afterward (which is as strange) it becomes an inhabitant of the Air, like its Sire, in the form of a Fly. And this, me thinks, does prompt me to propose certain conjectures, as Queries, having not yet had sufficient opportunity and leisure to answer them my self from my own Experiments or Observations.

And the first is, Whether all those things that we suppose to be bred from corruption and putrifaction, may not be rationally suppos'd to have their origination as natural as these Gnats, who, 'tis very probable, were first dropt into this Water, in the form of Eggs. Those Seeds or

Eggs

Eggs must certainly be very small, which so small a creature yields, and therefore we need not wonder that we find themselves, some of the younger of them, which I have observed not exceeded a tenth part of the bulk they have afterwards. Next, I have observed some of those little ones which must have hatched after the Water was inclosed in the Bottle, and there probably from Eggs, whereas those creatures have been supposed to be the corruption of the Water, there being not formerly any probable way how they should be generated.

A second is, whether these Eggs are immediately dropt in by the Gnats themselves, or, mediately, are brought down with rain; for it seems not very improbable, but that those small seeds may (being, perhaps, of so light a nature, and having so great a ratio of surface to so small a bulk of body) be ejected into the Water, so, perhaps, carried for a good while too and fro in it, till of Rain it be wash'd out of it.

A third is, whether multitudes of those other little creatures found to inhabit the Water for some time, do not, at certain seasons, wing and fly into the Air, others dive and hide themselves, and so contribute to the increase both of the one and the other.

#### Postscript.

A good while since the writing of this Description, I was shew'd by Doctor Peter Ball, an ingenious Member of the Royal Society, a Paper of Nuts, which he told me was sent him from a Brother of the Countrey, from *Mamhead* in *Devonshire*, some of them having been, as I suppose, broken off, others were still growing upon the sides of a stick, which seem'd by the bark, pliable, by certain strings that grew out of it, to be some piece of a Tree; they were all of them dry'd, and a little shrivell'd, round, of a brown colour; their shape was much like a Filbert, much smaller, some being about the bigness of a Bay-berry, the biggest, of a Hazel-Nut. Some of these that had no hole in them, I fully opened with my Knife, and found in them a good large Maggot, almost as bigg as a small Pea, which seem'd shagreen'd with Maggots, but shorter. I could not find them to move, though I thought them to be alive, because upon pricking them with a Pinn, they shew'd out a great deal of white *mucous* matter, which seem'd to be voluntary contraction of their skin; their husk or matrix consisted of several Coats, like the barks of Trees, the outermost being more rough, and the thickest, the middlemost more close, hard, and the innermost very thin, seeming almost like the skin within. The two outermost had root in the branch or stick, but the middlemost had no stem or process, but was onely a skin that cover'd the Nut. All the Nuts that had no holes eaten in them, I found no Maggots, but all that had holes, I found empty,